

## AUTHORS — DECEMBER 1993

PLASMA ENGINEERING

### MODEL REDUCTION FOR AXISYMMETRIC TOKAMAK CONTROL / *Gerasimos Tinios, Steve F. Horne, Ian H. Hutchinson, Stephen M. Wolfe*

**Gerasimos Tinios** (top right) (BS, nuclear engineering, Rensselaer Polytechnic Institute) is currently a graduate student at Massachusetts Institute of Technology (MIT), where he has been part of the Alcator C-Mod team since 1992. His interests include magnetohydrodynamics (MHD) and control theory. **Steve F. Horne** (top left) (BA, physics, Catholic University; PhD, physics, University of Wisconsin) came to the MIT Plasma Fusion Center in 1983 to join the neutral beam group on the Tara tandem mirror. He joined the MHD group of the Alcator project in 1989 and has worked since then on plasma shape control and magnetics analysis. **Ian H. Hutchinson** (bottom right) (BA, Cambridge University, United Kingdom; PhD, Australian National University, Australia, 1976) is a professor of nuclear engineering at MIT and leader of the Alcator tokamak research group as head of the Toroidal Confinement Division of the MIT Plasma Fusion Center. His research and teaching focus on magnetic confinement fusion plasmas, especially tokamak operation, stability, and diagnostics. **Stephen M. Wolfe** (bottom left) (SB and PhD, physics, MIT) is leader of the plasma section of the Toroidal Confinement Division of the MIT Plasma Fusion Center. His current research involves tokamak transport and control problems. He has also worked in plasma diagnostics, millimetre and submillimetre wave generation, and electron cyclotron heating of plasmas.



### FORCE-FREE MAGNETIC FIELD IN A TORUS OF ARBITRARY ASPECT RATIO / *Yasumasa Tsuji*

**Yasumasa Tsuji** (BS, 1967; MS, 1969; and Dr. Eng., 1988, electrical engineering, Tokyo Institute of Technology, Japan) is an associate professor in the Department of Electrical and Electronic Engineering at Ehime University. His current research interests lie in reversed-field pinch plasmas and radio-frequency waves in the torus.



**OPTIMIZATION OF STEADY-STATE AND HYBRID OPERATIONS IN A TOKAMAK FUSION REACTOR BY USING DIVERTOR SCALING MODELS /**  
*Yoshiki Murakami, Masayoshi Sugihara*

**Yoshiki Murakami** (top) (BS, nuclear engineering, 1984; Dr. Eng., Tokyo University, Japan, 1989) is a research scientist at the Toshiba Corporation Research and Development Center, where he has worked on magnetohydrodynamic instabilities. He is currently on loan to the Japan Atomic Energy Research Institute (JAERI), working on plasma design studies for the International Thermonuclear Experimental Reactor (ITER) home team. **Masayoshi Sugihara** (BS, instrumentation engineering, 1969; PhD, Keio University, Japan, 1977) is a senior scientist with the Fusion Experimental Reactor (FER) Team at JAERI. His work has been in the area of plasma design and analysis of tokamak fusion reactors. His interests are in plasma engineering for FER/ITER and in the development of analysis codes for related plasma physics.



**INSTRUMENTATION AND DATA HANDLING**

**DATA ACQUISITION SYSTEMS FOR FUSION DEVICES /** *Paul C. van Haren, Noud A. Oomens*

**Paul C. van Haren** (top) (BS, physics, University of Technology Eindhoven, The Netherlands, 1987) is a junior scientist at the FOM Instituut voor Plasmafysica "Rijnhuizen," where he is completing a PhD thesis on the development of novel data acquisition and feedback control systems. His current research interests focus on the interaction between recent achievements in computer science and their applications in physics research. **Noud A. Oomens** (PhD, physics, University of Nijmegen, The Netherlands, 1971) is a senior scientist at the FOM Instituut voor Plasmafysica "Rijnhuizen," where he is responsible for the operation of the medium-sized RTP tokamak. His current research interests are pellet injection, the heating of plasmas by electron cyclotron resonance waves, and the management of data acquisition in thermonuclear research.



**NUCLEAR REACTIONS IN SOLIDS**

**ION BAND-STATE FUSION: REACTIONS, POWER DENSITY, AND THE QUANTUM REALITY QUESTION /** *Scott R. Chubb, Talbot A. Chubb*

**Scott R. Chubb** (top) (BA, physics, Princeton University, 1975; MA, 1978, and PhD, 1982, physics, State University of New York at Stony Brook) is employed in the Remote Sensing Division of the Naval Research Laboratory. His current interests include microwave sensing of the ocean, the importance of atomic clocks and precision time in the global positioning system, and the recent observation of anomalous effects in deuterated metals (commonly referred to as "cold fusion" and "cluster impact fusion"). **Talbot A. Chubb** (AB, physics, Princeton University, 1944; PhD, physics, University of North Carolina, 1951) has worked at the Naval Research Laboratory and as a consultant to Bendix Field Engineering Corporation. His current interests include radiation detectors and electrical discharges, ultraviolet and X-ray emission from the sun and stars, solar activity, and thermochemical energy transport.



**THREE-DIMENSIONAL ANALYSIS OF SiC/SiC COMPOSITE STRUCTURES FOR FUSION REACTORS / Khalil M. Elawadly, James P. Blanchard**

**Khalil M. Elawadly** (top) (BS, nuclear engineering, 1979; MS, Faculty of Engineering, Alexandria University, Egypt, 1987) is currently a visiting scholar in nuclear engineering and engineering physics at the University of Wisconsin-Madison (UM). His research interests are in the area of composite materials. **James P. Blanchard** (BS, mechanical engineering, 1983; MS, 1984, and PhD, 1988, nuclear engineering, University of California-Los Angeles) is an assistant professor in the Department of Nuclear Engineering and Engineering Physics at UW. His current work is primarily in the area of the effects of disruptions, erosion, and radiation damage on stresses in blankets and plasma-facing components.



**SURFACE TOPOGRAPHY OF A PALLADIUM CATHODE AFTER ELECTROLYSIS IN HEAVY WATER / David S. Silver, John Dash, Patrick S. Keefe**

**David S. Silver** (BA, physics, Reed College, 1983; MS, physics, Portland State University, 1990) is a scientist at Phillips Laboratory at Edwards Air Force Base. **John Dash** [BS, metallurgy, Pennsylvania State University (PSU), 1955; MS, metallurgy, Northwestern University, 1960; PhD, metallurgy, PSU, 1966] is a professor in the Department of Physics at Portland State University. **Patrick S. Keefe** (BS, Baker University, 1986; MS, Portland State University, 1990) currently teaches physics at Clatsop Community College in Astoria, Oregon.

